

**WE CLAIM:**

1. In an internetworked computer system comprising at least one user computer, at least one merchant computer, and a verification computer interconnected to a computer network, a method of approving an online transaction between the user computer and the merchant computer in conjunction with a payment card associated with the user computer, comprising the steps of:

a) transmitting a transaction request from the user computer to the merchant computer;

b) transmitting a verification request from the merchant computer to the verification computer, the verification request comprising a first data string associated with the payment card;

c) storing the verification request at the verification computer in association with a transaction identifier and a verification data string;

d) transmitting the transaction identifier and the verification data string from the verification computer to the merchant computer;

e) storing at the merchant computer (i) the verification data string as an expected verification data string, and (ii) the transaction identifier;

f) transmitting from the merchant computer to the user computer the transaction identifier;

g) the user computer transmitting to the verification computer (i) the transaction identifier, and (ii) a second data string associated with the payment card;

5 h) the verification computer using the transaction identifier received from the user computer to retrieve the verification request previously stored by the verification computer with that received transaction identifier;

10 i) the verification computer performing a verification step by using the first data string associated with the payment card retrieved from storage and the second data string associated with the payment card received from the user computer to verify if the transaction should be approved;

15 j) upon successful verification that the transaction should be approved, the verification computer transmitting a verification approval message to the user computer, the verification approval message comprising the transaction identifier and the verification data string associated therewith as a confirmation verification data string;

20 k) the user computer transmitting the verification approval message to the merchant computer;

25 l) the merchant computer using the transaction identifier in the verification approval message to retrieve an expected verification data string previously stored;

30 m) the merchant computer comparing the expected verification data string with the confirmation verification data string from the verification approval message; and

n) the merchant computer indicating that the transaction has been approved if the comparison is positive.

2. The method of claim 1 wherein the verification request transmitted from the merchant computer to the verification computer further comprises an indication of a payment amount associated with the transaction request.

3. The method of claim 2 wherein the verification step performed by the verification computer determines if an account associated with the payment card is sufficient to cover the payment amount in the verification request.

4. The method of claim 3 wherein the transaction request comprises information associated with a product to be purchased by the user computer and the payment amount associated with the product.

5. The method of claim 4 wherein the payment card is a debit card.

6. The method of claim 5 wherein the first data string is an account number associated with the debit card, and wherein the second data string is a PIN associated with the debit card.

7. The method of claim 4 wherein the payment card is a credit card.

8. The method of claim 7 wherein the first data string is an account number associated with the credit card.

9. The method of claim 8 wherein the second data string is an expiration date associated with the credit card.

10. The method of claim 8 wherein the second data string is a CVV2 number associated with the credit card.

5 11. The method of claim 1 wherein the verification request transmitted from the merchant computer to the verification computer further comprises a merchant identifier.

10 12. The method of claim 1 wherein the transaction identifier is generated by the verification computer.

13. The method of claim 1 wherein the verification data string is generated by the verification computer.

15 14. The method of claim 1 wherein the user computer is executing a web browser program, and wherein the user computer is caused to transmit to the verification computer (i) the transaction identifier, and (ii) a second data string associated with the payment card, by a redirect command sent from the merchant computer to the user computer.

20 15. The method of claim 1 wherein the user computer is executing a web browser program, and wherein the user computer is caused to transmit the verification approval message to the merchant computer by a redirect command sent from the verification computer to the user computer.

25 16. The method of claim 1 wherein the step of the user computer transmitting to the verification computer (i) the transaction identifier, and (ii) a second data string associated with the payment card, comprises the steps of:

30 the user computer transmitting the transaction identifier to the verification computer;

the verification computer requesting the user computer to transmit the second data string to the verification computer; and

the user computer transmitting the second data string to the verification computer in response thereto.

17. The method of claim 16 wherein the verification computer requests the user computer to transmit the second data string to the verification computer by sending a form to a browser program executing on the user computer, the form comprising a data entry field used by an operator of the user computer to enter the requested second data string.

18. The method of claim 3 wherein the step of determining if an account associated with the payment card is sufficient to cover the payment amount in the verification request comprises the step of the verification computer communicating with a gateway computer associated with an existing credit approval system.

19. The method of claim 1 wherein the first data string associated with the payment card is obtained by the merchant computer as part of the transaction request transmitted by the user computer.

20. The method of claim 1 wherein the first data string associated with the payment card is obtained by the merchant computer by retrieval from storage.

21. A system for approving an online transaction comprising:

- a) a user computer;
- b) a merchant computer; and
- c) a verification computer;

said user computer, said merchant computer, and said verification computer are interconnected to a computer network;

5 wherein said online transaction is executed in conjunction with a payment card associated with said user computer; and further wherein:

10 a) said user computer is programmed to transmit a transaction request to the merchant computer;

b) said merchant computer is programmed to transmit a verification request to the verification computer, the verification request comprising a first data string associated with the payment card;

15 c) said verification computer is programmed to (i) store the verification request in association with a transaction identifier and a verification data string, and (ii) transmit the transaction identifier and the verification data string to the merchant computer;

20 d) said merchant computer is further programmed to store (i) the verification data string as an expected verification data string, and (ii) the transaction identifier, and to transmit to the user computer the transaction identifier;

25 e) said user computer user computer is further programmed to transmit to the verification computer (i) the transaction identifier, and (ii) a second data string associated with the payment card;

30 f) said verification computer is further programmed to (i) use the transaction identifier received from the user computer

to retrieve the verification request previously stored with that received transaction identifier, to (ii) perform a verification step by using the first data string associated with the payment card retrieved from storage and the second data string associated with the payment card received from the user computer to verify if the transaction should be approved, to (iii) transmit, upon successful verification that the transaction should be approved, a verification approval message to the user computer, the verification approval message comprising the transaction identifier and the verification data string associated therewith as a confirmation verification data string;

g) said user computer is further programmed to transmit the verification approval message to the merchant computer;

h) said merchant computer is further programmed to (i) use the transaction identifier in the verification approval message to retrieve an expected verification data string previously stored, to (ii) compare the expected verification data string with the confirmation verification data string from the verification approval message, and to (iii) indicate that the transaction has been approved if the comparison is positive.

22. The system of claim 21 wherein the verification request transmitted from the merchant computer to the verification computer further comprises an indication of a payment amount associated with the transaction request.

23. The system of claim 22 wherein the verification computer is programmed to perform the verification step by determining

if an account associated with the payment card is sufficient to cover the payment amount in the verification request.

24. The system of claim 23 wherein the transaction request comprises information associated with a product to be purchased by the user computer and the payment amount associated with the product.

25. The system of claim 24 wherein the payment card is a debit card.

26. The system of claim 25 wherein the first data string is an account number associated with the debit card, and wherein the second data string is a PIN associated with the debit card.

27. The system of claim 24 wherein the payment card is a credit card.

28. The system of claim 27 wherein the first data string is an account number associated with the credit card.

29. The system of claim 28 wherein the second data string is an expiration date associated with the credit card.

30. The system of claim 28 wherein the second data string is a CVV2 number associated with the credit card.

31. The system of claim 21 wherein the verification request transmitted from the merchant computer to the verification computer further comprises a merchant identifier.



32. The system of claim 21 wherein the verification computer is programmed to generate the transaction identifier.

33. The system of claim 21 wherein the verification computer is programmed to generate the verification data string.

34. The system of claim 21 wherein the user computer is further programmed to execute a web browser program, and wherein the user computer is caused to transmit to the verification computer (i) the transaction identifier, and (ii) a second data string associated with the payment card, by a redirect command sent from the merchant computer to the user computer.

35. The system of claim 21 wherein the user computer is further programmed to execute a web browser program, and wherein the user computer is caused to transmit the verification approval message to the merchant computer by a redirect command sent from the verification computer to the user computer.

36. The system of claim 21 wherein the user computer is programmed to transmit to the verification computer (i) the transaction identifier, and (ii) a second data string associated with the payment card, by a process executing the steps of comprises the steps of:

the user computer transmitting the transaction identifier to the verification computer;

the verification computer requesting the user computer to transmit the second data string to the verification computer; and

the user computer transmitting the second data string to the verification computer in response thereto.

37. The system of claim 36 wherein the verification computer requests the user computer to transmit the second data string to the verification computer by sending a form to a browser program executing on the user computer, the form comprising a data entry field used by an operator of the user computer to enter the requested second data string.

38. The system of claim 23 wherein the step of determining if an account associated with the payment card is sufficient to cover the payment amount in the verification request comprises the step of the verification computer communicating with a gateway computer associated with an existing credit approval system.

39. The system of claim 21 wherein the first data string associated with the payment card is obtained by the merchant computer as part of the transaction request transmitted by the user computer.

40. The system of claim 21 wherein the first data string associated with the payment card is obtained by the merchant computer by retrieval from storage.

41. A method of a merchant computer obtaining approval from a verification computer of an online transaction requested by a user computer in conjunction with a payment card associated with the user computer, comprising the steps of:

a) on receipt of a transaction request, the merchant computer transmitting a verification request to the verification computer, the verification request comprising a first data string associated with the payment card;

b) storing the verification request at the verification computer in association with a transaction identifier and a verification data string;

c) transmitting the transaction identifier and the verification data string from the verification computer to the merchant computer;

d) storing at the merchant computer (i) the verification data string as an expected verification data string, and (ii) the transaction identifier;

e) transmitting the transaction identifier from the merchant computer to the verification computer via the user computer;

f) the verification computer obtaining from the user computer a second data string associated with the payment card;

g) the verification computer using the transaction identifier received from the merchant computer via the user computer to retrieve the verification request previously

stored by the verification computer with that received transaction identifier;

5 h) the verification computer performing a verification step by using the first data string associated with the payment card retrieved from storage and the second data string associated with the payment card received from the user computer to verify if the transaction should be approved;

10 i) upon successful verification that the transaction should be approved, the verification computer transmitting a verification approval message to the merchant computer via the user computer, the verification approval message comprising the transaction identifier and the verification data string associated therewith as a confirmation verification data string;

15 j) the merchant computer using the transaction identifier in the verification approval message to retrieve an expected verification data string previously stored;

20 k) the merchant computer comparing the expected verification data string with the confirmation verification data string from the verification approval message; and

25 l) the merchant computer indicating that the transaction has been approved if the comparison is positive.

30 42. The method of claim 41 wherein the verification request transmitted from the merchant computer to the verification computer further comprises an indication of a payment amount associated with the transaction request.

43. The method of claim 42 wherein the verification step performed by the verification computer determines if an account associated with the payment card is sufficient to cover the payment amount in the verification request.

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44. The method of claim 43 wherein the transaction request comprises information associated with a product to be purchased by the user computer and the payment amount associated with the product.

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45. The method of claim 44 wherein the payment card is a debit card.

46. The method of claim 45 wherein the first data string is an account number associated with the debit card, and wherein the second data string is a PIN associated with the debit card.

47. The method of claim 44 wherein the payment card is a credit card.

48. The method of claim 47 wherein the first data string is an account number associated with the credit card.

49. The method of claim 48 wherein the second data string is an expiration date associated with the credit card.

50. The method of claim 48 wherein the second data string is a CVV2 number associated with the credit card.

51. The method of claim 41 wherein the verification request transmitted from the merchant computer to the verification computer further comprises a merchant identifier.

52. The method of claim 41 wherein the transaction identifier is generated by the verification computer.

5 53. The method of claim 41 wherein the verification data string is generated by the verification computer.

54. The method of claim 41 wherein transaction identifier is transmitted from the merchant computer to the verification  
10 computer via the user computer by the merchant computer issuing a redirect command to the user computer.

55. The method of claim 41 wherein the verification approval message is transmitted from the verification computer to the  
15 merchant computer via the user computer by the verification computer issuing a redirect command to the user computer.

56. The method of claim 41 wherein the verification computer obtains the second data string associated with the payment  
20 card by a request issued to the user computer.

57. The method of claim 56 wherein the verification computer requests the user computer to transmit the second data string  
25 to the verification computer by sending a form to a browser program executing on the user computer, the form comprising a data entry field used by an operator of the user computer to enter the requested second data string.

58. The method of claim 43 wherein the step of determining if  
30 an account associated with the payment card is sufficient to cover the payment amount in the verification request comprises the step of the verification computer communicating with a

gateway computer associated with an existing credit approval system.

59. The method of claim 41 wherein the first data string associated with the payment card is obtained by the merchant computer as part of the transaction request.

60. The method of claim 41 wherein the first data string associated with the payment card is obtained by the merchant computer by retrieval from storage.

61. A system for approving an online transaction comprising:

a) a merchant computer; and

b) a verification computer;

said merchant computer and said verification computer are interconnected to a computer network;

wherein said online transaction is executed in conjunction with a payment card; and further wherein:

a) said merchant computer is programmed to receive a transaction request and in response thereto transmit a verification request to the verification computer, the verification request comprising a first data string associated with the payment card;

b) said verification computer is programmed to (i) store the verification request in association with a transaction identifier and a verification data string, and (ii) transmit the transaction identifier and the verification data string to the merchant computer;

c) said merchant computer is further programmed to store (i) the verification data string as an expected verification data

string, and (ii) the transaction identifier, and to transmit the transaction identifier to the verification computer via the user computer;

5 d) said verification computer is further programmed to (i) use the transaction identifier received from the merchant computer via user computer to retrieve the verification request previously stored with that received transaction identifier, (ii) obtain a second data string associated with  
10 the payment card from a user computer (iii) perform a verification step by using the first data string associated with the payment card retrieved from storage and the second data string associated with the payment card received from the user computer to verify if the transaction should be approved, to (iv) transmit, upon successful verification that the transaction should be approved, a verification approval message to the merchant computer via the user computer, the verification approval message comprising the transaction identifier and the verification data string associated therewith as a confirmation verification data string;

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15 e) said merchant computer is further programmed to (i) use the transaction identifier in the verification approval message to retrieve an expected verification data string previously stored, to (ii) compare the expected verification data string with the confirmation verification data string from the verification approval message, and to (iii) indicate that the transaction has been approved if the comparison is positive.

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62. The system of claim 61 wherein the verification request transmitted from the merchant computer to the verification



computer further comprises an indication of a payment amount associated with the transaction request.

5 63. The system of claim 62 wherein the verification computer is programmed to perform the verification step by determining if an account associated with the payment card is sufficient to cover the payment amount in the verification request.

10 64. The system of claim 63 wherein the transaction request comprises information associated with a product to be purchased by the user computer and the payment amount associated with the product.

15 65. The system of claim 64 wherein the payment card is a debit card.

20 66. The system of claim 65 wherein the first data string is an account number associated with the debit card, and wherein the second data string is a PIN associated with the debit card.

25 67. The system of claim 64 wherein the payment card is a credit card.

30 68. The system of claim 67 wherein the first data string is an account number associated with the credit card.

69. The system of claim 68 wherein the second data string is an expiration date associated with the credit card.

70. The system of claim 68 wherein the second data string is a CVV2 number associated with the credit card.

71. The system of claim 61 wherein the verification request transmitted from the merchant computer to the verification computer further comprises a merchant identifier.

5 72. The system of claim 61 wherein the verification computer is programmed to generate the transaction identifier.

73. The system of claim 61 wherein the verification computer is programmed to generate the verification data string.

10 74. The system of claim 61 wherein the merchant computer is programmed to transmit the transaction identifier to the verification computer via the user computer by issuing a redirect command to the user computer.

15 75. The system of claim 61 wherein the verification computer is programmed to transmit the verification approval message to the merchant computer via the user computer by issuing a redirect command to the user computer.

20 76. The system of claim 61 wherein the verification computer is programmed to obtain the second data string associated with the payment card by a request issued to the user computer.

25 77. The system of claim 76 wherein the verification computer requests the user computer to transmit the second data string to the verification computer by sending a form to a browser program executing on the user computer, the form comprising a data entry field used by an operator of the user computer to  
30 enter the requested second data string.

78. The system of claim 63 wherein the step of determining if an account associated with the payment card is sufficient to

cover the payment amount in the verification request comprises the step of the verification computer communicating with a gateway computer associated with an existing credit approval system.

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79. The system of claim 61 wherein the first data string associated with the payment card is obtained by the merchant computer as part of the transaction request transmitted by the user computer.

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80. The system of claim 61 wherein the first data string associated with the payment card is obtained by the merchant computer by retrieval from storage.

81. In an internetworked computer system comprising at least one user computer, at least one merchant computer, and a verification computer interconnected to a computer network, a method of the verification computer approving an online transaction between the user computer and the merchant computer in conjunction with a payment card associated with the user computer, comprising the steps of:

- a) receiving a verification request from a merchant computer, the verification request comprising a first data string associated with the payment card;
- b) storing the verification request in association with a transaction identifier and a verification data string;
- c) transmitting the transaction identifier and the verification data string to the merchant computer;

d) receiving from the user computer (i) the transaction identifier, and (ii) a second data string associated with the payment card;

5 e) using the transaction identifier received from the user computer to retrieve the verification request previously stored with that received transaction identifier;

10 f) performing a verification step by using the first data string associated with the payment card retrieved from storage and the second data string associated with the payment card received from the user computer to verify if the transaction should be approved; and

15 g) upon successful verification that the transaction should be approved, transmitting a verification approval message to the user computer, the verification approval message comprising the transaction identifier and the verification data string associated therewith as a confirmation verification data string.

20 82. The method of claim 81 wherein the verification request received by the verification computer further comprises an indication of a payment amount associated with the transaction request.

25 83. The method of claim 82 wherein the verification step determines if an account associated with the payment card is sufficient to cover the payment amount in the verification request.

30 84. The method of claim 81 wherein the payment card is a debit card.

85. The method of claim 84 wherein the first data string is an account number associated with the debit card, and wherein the second data string is a PIN associated with the debit card.

86. The method of claim 81 wherein the payment card is a credit card.

87. The method of claim 86 wherein the first data string is an account number associated with the credit card.

88. The method of claim 87 wherein the second data string is an expiration date associated with the credit card.

89. The method of claim 87 wherein the second data string is a CVV2 number associated with the credit card.

90. The method of claim 81 wherein the verification request received by the verification computer further comprises a merchant identifier.

91. The method of claim 81 wherein the transaction identifier is generated by the verification computer.

92. The method of claim 81 wherein the verification data string is generated by the verification computer.

93. The method of claim 81 wherein the step of receiving from the user computer (i) the transaction identifier, and (ii) a second data string associated with the payment card comprises:  
the verification computer receiving the transaction identifier from the user computer;

the verification computer requesting the user computer to transmit the second data string to the verification computer; and

the verification computer receiving the second data string from the user computer in response thereto.

94. The method of claim 93 wherein the verification computer requests the user computer to transmit the second data string to the verification computer by sending a form to a browser program executing on the user computer, the form comprising a data entry field used by an operator of the user computer to enter the requested second data string.

95. The method of claim 83 wherein the step of determining if an account associated with the payment card is sufficient to cover the payment amount in the verification request comprises the step of communicating with a gateway computer associated with an existing credit approval system.

96. A verification computer for approving an online transaction between a user computer and a merchant computer, comprising:

means for communicating with each of the user computer and the merchant computer over a computer network; processing means programmed to:

a) receive a verification request from a merchant computer, the verification request comprising a first data string associated with the payment card;

b) store the verification request in association with a transaction identifier and a verification data string;

c) transmit the transaction identifier and the verification data string to the merchant computer;

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d) receive from the user computer (i) the transaction identifier, and (ii) a second data string associated with the payment card;

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e) use the transaction identifier received from the user computer to retrieve the verification request previously stored with that received transaction identifier;

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f) perform a verification step by using the first data string associated with the payment card retrieved from storage and the second data string associated with the payment card received from the user computer to verify if the transaction should be approved; and

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g) upon successful verification that the transaction should be approved, transmit a verification approval message to the user computer, the verification approval message comprising the transaction identifier and the verification data string associated therewith as a confirmation verification data string.

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97. The verification computer of claim 96 wherein the processing means is further programmed to utilize an indication of a payment amount associated with a transaction request.

98. The verification computer of claim 97 wherein the processing means is further programmed to determine if an account associated with the payment card is sufficient to cover the payment amount in the verification request.

99. The verification computer of claim 96 wherein the processing means is further programmed to receive the transaction identifier from the user computer; to request the user computer to transmit the second data string to the verification computer; and to receive the second data string from the user computer in response thereto.

100. The verification computer of claim 99 wherein the processing means is further programmed to request the user computer to transmit the second data string to the verification computer by sending a form to a browser program executing on the user computer, the form comprising a data entry field used by an operator of the user computer to enter the requested second data string.

101. The verification computer of claim 98 wherein the processing means is further programmed to determine if an account associated with the payment card is sufficient to cover the payment amount in the verification request by communicating with a gateway computer associated with an existing credit approval system.

102. In an internetworked computer system comprising at least one user computer, at least one merchant computer, and a verification computer interconnected to a computer network, a method of the merchant computer obtaining approval for an online transaction between the user computer and the merchant



computer in conjunction with a payment card associated with the user computer, comprising the steps of:

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- a) receiving a transaction request from the user computer;
  - b) transmitting a verification request to the verification computer, the verification request comprising a first data string associated with the payment card;
  - 10 c) receiving from the verification computer a transaction identifier and a verification data string;
  - d) storing (i) the verification data string as an expected verification data string, and (ii) the transaction identifier;
  - e) transmitting to the verification computer via the user computer the transaction identifier;
  - f) receiving from the verification computer via the user computer a verification approval message, the verification approval message comprising the transaction identifier and a verification data string associated therewith as a confirmation verification data string;
  - 25 g) using the transaction identifier in the verification approval message to retrieve an expected verification data string previously stored;
  - h) comparing the expected verification data string with the confirmation verification data string from the verification approval message; and
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i) indicating that the transaction has been approved if the comparison is positive.

103. The method of claim 102 wherein the verification request transmitted to the verification computer further comprises an indication of a payment amount associated with the transaction request.

104. The method of claim 103 wherein the transaction request comprises information associated with a product to be purchased by the user computer and the payment amount associated with the product.

105. The method of claim 102 wherein the verification request transmitted from the merchant computer to the verification computer further comprises a merchant identifier.

106. The method of claim 102 wherein the transaction identifier is generated by the verification computer.

107. The method of claim 102 wherein the verification data string is generated by the verification computer.

108. The method of claim 102 wherein the step of transmitting to the verification computer via the user computer the transaction identifier comprises sending a redirect command to the user computer.

109. The method of claim 102 wherein the first data string associated with the payment card is obtained by the merchant computer as part of the transaction request transmitted by the user computer.

110. The method of claim 102 wherein the first data string associated with the payment card is obtained by the merchant computer by retrieval from storage.

5 111. A merchant computer for executing an online transaction with a user computer on approval by a verification computer, comprising:

means for communicating with each of the user computer and the verification computer over a computer network;

processing means programmed to:

a) receive a transaction request from the user computer;

b) transmit a verification request to the verification computer, the verification request comprising a first data string associated with the payment card;

c) receive from the verification computer a transaction identifier and a verification data string;

d) store (i) the verification data string as an expected verification data string, and (ii) the transaction identifier;

e) transmit to the verification computer via the user computer the transaction identifier;

f) receive from the verification computer via the user computer a verification approval message, the verification approval message comprising the

transaction identifier and a verification data string associated therewith as a confirmation verification data string;

5           g)    use the transaction identifier in the verification approval message to retrieve an expected verification data string previously stored;

10           h)    comparing the expected verification data string with the confirmation verification data string from the verification approval message; and

          i)    indicating that the transaction has been approved if the comparison is positive.

112. The merchant computer of claim 111 wherein the processing means is further programmed to include in the verification request transmitted to the verification computer an indication of a payment amount associated with the transaction request.

113. The merchant computer of claim 111 wherein the processing means is further programmed to transmitting to the verification computer via the user computer the transaction identifier by sending a redirect command to the user computer.